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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,205	11/12/2003	Ebrahim Andideh	ITL.1008US (P15533)	8293

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EXAMINER

HUR, JUNG H

ART UNIT PAPER NUMBER

2824

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p>10/712,205</p>	<p>Applicant(s)</p> <p>ANDIDEH ET AL.</p>	
	<p>Examiner</p> <p>Jung (John) H. Hur</p>	<p>Art Unit</p> <p>2824</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 14-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-13 and 27-36 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Reply to Office Action

1. Acknowledgment is made of applicant's Reply to Office Action, filed 01 September 2006. The remarks disclosed therein have been considered.

No claims have been cancelled or added by Reply. Therefore, claims 1-36 remain pending in the application.

Election/Restrictions

2. Claims 14-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 20 October 2005.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-6 and 9-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Toyama (EP 0073486 A2).

Regarding claim 1, Toyama, for example in Fig. 1, discloses a memory comprising: a first layer and a second layer (for example, layers 12d and 12c) of memory material spaced from one another (by 10d and 14c) in a first direction (vertical direction); and a first address line and a

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second address line (for example, B11 and B21) extending substantially in said first direction (vertical direction) through said first and second layers (see Figs. 1 and 2).

Regarding claims 3-6 and 9-13, Toyama further discloses third and fourth address lines (for example, w11 and w21 in Fig. 1) which extend in a second direction (perpendicular to the first direction) different from said first direction (see Fig. 1);

wherein said first and second directions are substantially transverse to one another (perpendicular or orthogonal; see Fig. 1);

wherein said third and fourth address lines are in said first layer (12d);

a first cell formed in said first layer between said first and third address lines (within M111 between B11 and w11) and a second cell formed in said first layer between said second and fourth address lines (within M121 between B21 and w21);

more than two lines (see Fig. 1);

more than two layers (see Fig. 1);

wherein said layers are vertically stacked (see Fig. 1);

wherein successive layers are spaced by an insulator (for example, 14c; see page 5, lines 15-18);

wherein said lines are vias (since B11 and B21 extend vertically via insulating layers 14a - 14c) extending vertically, said memory including a substrate (10a; see page 5, lines 10-12) having a surface, said first direction being substantially transverse to said surface (see Fig. 1).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 27-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyama (EP 0073486 A2) in view of Tuttle et al. (U.S. Pat. No. 5,448,110).

Regarding claim 2, Toyama discloses a memory of claim 1, with the exception of said memory material including a ferroelectric polymer material. Tuttle discloses a memory material including a ferroelectric polymer material (within 16 in Fig. 1A; see column 2, lines 44-46).

Since ferroelectric memories were common and well known in the art (as exemplified in Tuttle), it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the arrangement of Toyama for a memory with a memory material including a ferroelectric polymer material, for the purpose of providing a large memory capacity and a fast operating speed in such memory (see for example Toyama page 3, lines 18-20).

Regarding claims 27, 28 and 31-36, Toyama discloses the memory of claims 1, 3-6 and 9-13 (with B11 and B12 in Fig. 1 as a plurality of first address lines in claim 27), and further discloses a system comprising: a controller (to read from and write to the memory; see for example page 8, lines 14-20); an interface coupled to said controller (to input and output data to and from the memory); and said memory (Fig. 1) coupled to said controller.

Toyama does not disclose that the memory is a ferroelectric polymer memory and that the interface is a wireless interface.

Tuttle, for example in Fig. 1A, discloses a system comprising: a controller (including 15); a wireless interface (including 12-14, and a dipole antenna 4 and 5) coupled to said controller; and a ferroelectric polymer memory (within 16; see also column 2, lines 44-46) coupled to said controller; wherein said interface includes a dipole antenna (4 and 5; see column 6, lines 11-50).

Since ferroelectric memories were common and well known in the art (as exemplified in Tuttle), it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the arrangement of Toyama for a memory with a memory material including a ferroelectric polymer material, for the purpose of providing a large memory capacity and a fast operating speed in such memory (see for example Toyama page 3, lines 18-20).

Further, since systems comprising a wireless interface were common and well known in the art (as exemplified in Tuttle), it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the memory of Toyama in systems with a wireless interface (such as that of Tuttle), for the purpose of providing an increased mobility in such systems.

Regarding claims 29 and 30, The Toyama/Tuttle combination discloses the system of claim 28, and further discloses that said interface includes a dipole antenna (4 and 5 in Fig. 1A of Tuttle), with the exception of said lines forming a bicell structure.

Since a bicell structure with a complementary bit line pair was common and well known in the art, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to pair up the first address lines of Toyama as complementary pairs, such that said lines form a bicell structure.

Allowable Subject Matter

7. Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The record of the prosecution as a whole makes clear the reasons for the indication of allowable subject matter. See the previous Office Action.

Response to Arguments

8. Applicant's arguments filed 01 September 2006 have been fully considered but they are not persuasive.

Applicant argues (in the second paragraph on page 6) that “Toyama teaches a DRAM, SRAM, or ROM and, therefore, has no memory material. These devices simply work on integrated capacitors and have an absence of any memory material. Moreover, there is no address line through any memory material, at least in part, because there is no memory material.”

In response, it is noted that a DRAM, SRAM, or ROM--being a memory device with memory cells--intrinsically requires, and therefore has, memory materials for the memory cells. For example, a DRAM cell requires and has materials for a capacitor and a transistor, a SRAM cell requires and has materials for cross-coupled inverter transistors, and a ROM cell requires and has materials to store read-only data. Further, Fig. 1 of Toyama shows address lines (for example, W11 and B11) through layers of memory materials (for example, 12d) forming such memory cells (for example, M111).

In response to Applicant's argument (in the third paragraph on page 6) that conventional ferroelectric memories (for example, that of Tuttle) "do not have layers stacked on top of each other" and "do not have address lines running in one embodiment in the vertical direction through those memory material layers," it is noted that Toyama was cited as disclosing a memory arrangement having layers stacked on top of each other and address lines running in the vertical direction through the memory material layers, and that Tuttle was cited as a secondary reference which, among others, exemplifies a common and well known ferroelectric memory with ferroelectric memory material that would be used in the advantageous memory arrangement of Toyama. See the rejections in the previous Office Action, repeated above.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung (John) H. Hur whose telephone number is (571) 272-1870. The examiner can normally be reached on M-F 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (in USA or CANADA) or 571-272-1000.

jhh



Jung (John) H. Hur
Primary Examiner
Art Unit 2824